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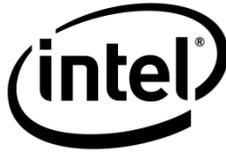
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News Fact Sheet

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Intel Details 2011 Processor Features, Offers Stunning Visuals Built-in

INTEL DEVELOPER FORUM, San Francisco, Sept. 13, 2010 – Intel Corporation today discussed the technical details of its 2nd Generation Intel® Core™ processor family architecture (codenamed "Sandy Bridge"), scheduled for production later this year. Numerous new or improved features were detailed by Paul Otellini, Intel Corporation's president and CEO, and Dadi Perlmutter, executive vice president and general manager of the Intel Architecture Group in today's opening keynote at the Intel Developer Forum.

New Microarchitecture on 32nm process: The 2nd Generation Intel® Core™ processor family microarchitecture is Intel's first new microarchitecture delivered on Intel's cutting-edge 32nm process technology with second-generation high-k metal gate transistors. Intel applies innovative manufacturing and transistor design to deliver the next generation of microprocessors with higher performance at lower power.

Next Generation Intel® Turbo Boost Technology: Next-generation Intel® Turbo Boost Technology adapts by varying turbo frequency to maximize performance or conserve energy depending upon the type of instructions. Intel Turbo Boost Technology boosts power levels to achieve performance gains for high-intensity "dynamic" workloads. In addition, a new power-averaging algorithm manages power and thermal headroom to optimize performance.

Improved Cores with Innovative Ring Interconnect: The 2nd Generation Intel® Core™ processor family microarchitecture features vastly improved cores that are better connected with an innovative ring interconnect for improved data bandwidth, performance and power efficiency. The ring interconnect is a high-bandwidth, low-latency modular on-die system for connection between processor components for improved performance. The ring interconnect enables high-speed and low-latency

communication between the upgraded processor cores, processor graphics, and other integrated components such as memory controller and display.

Industry's First Processor Graphics featuring New Execution Pipeline: Innovations in the 2nd Generation Intel® Core processor family graphics architecture significantly increase performance and usher in exciting new features – all on Intel's cutting-edge 32nm process technology. Intel's new processor graphics delivers enhanced visual features focused on the areas where most users are computing today: HD video, Stereoscopic 3-D, mainstream gaming, multi-tasking and online socializing and multimedia. This new microarchitecture features shared resources across processing cores and graphics architectures to enable optimal performance while saving power. Perlmutter also demonstrated hardware accelerated transcode performance using the architecture's dedicated silicon for media processing, which includes encoding and decoding of HD video.

Intel Advanced Vector Extensions (AVX): AVX delivers improved performance, rich functionality, ability to better manage, rearrange and sort data. A new 256-bit instruction set accelerates floating point intensive applications such as digital photo editing and content creation.

Desktop Low Power Roadmap: 65W, 45W, 35W TDP Performance Optimized and Power Optimized Desktop Lifestyle solutions. Intel will offer low-power versions of the 2nd Generation Intel® Core™ processor family for desktops, including performance-optimized 65W solutions and 45W/35W power-optimized solutions. Intel will ship specific boxed versions of these new low-power processors with a new low-profile fan heat sink via Intel Authorized Distributors, making it easier to build smaller, more stylish desktop systems. Intel is also investing in standardized, thin mini-ITX based desktop boards and chassis for all-in-one systems, helping local system integrators participate in this fast-growing product segment.

Innovative All-in-One Integrated Desktop Solutions Demonstrated from Foxconn, Mitac and Acer: Foxconn and Mitac demonstrated sleek and innovative all-in-one desktop designs. The Foxconn and Mitac designs are proof of concepts based on Intel's Buffalo Bay- enabling motherboard and reference power supply for all-in-one designs. The Acer system is based on the 65W Intel® Core i7 desktop processor.

Next-Generation Intel® Xeon® Processors (Codenamed "Sandy Bridge") will Enable the Next Level of Server Performance: Otellini demonstrated a dual-processor Next Generation Intel® Xeon® processor server running Vidyo* video conferencing software that utilizes the 32 threads available on the system, and takes advantage of the AES New Instructions set (AESNI). Next Generation Xeon™ processors for 2 socket servers and workstations run 8 cores and 16 threads per processor and are on schedule for production in the second half of 2011.

Computing Devices Based on Intel Embedded Sandy Bridge Processors: Sandy Bridge AVX instructions will enable faster performance on digital signal image and

digital security processing workloads for compute-intensive applications such as radar detection, hurricane command center, ruggedized navigation systems and remote medical image processing.

SUMMARY: Putting all the pieces together -- seamless interactions with computing devices all around -- enabled by performance, the 2nd Generation Intel® Core™ processor family is based on a balanced architecture that directs all of the resources wherever and whenever it's needed, delivering smart performance as well as a seamless and stunning visual experience.